THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

No. 1474 OCTOBER 7, 1916. VOL. XXIX.

A SUPERSTITION IN TREATMENT.

We print this week a report of a cruelty prosecution in the country, which presents one feature of special interest. This lies in the fact that the horse concerned had been deliberately subjected to "treatment with maggots" by the owner, in the hope that benefit would follow. Mediæval ideas die out much sooner in some districts than in others; and there are practitioners who will be surprised to learn that this one still exists in England. Others know quite well that the belief that maggots somehow exercise a curative effect upon diseased tissues is still far from extinct among the more ignorant inhabitants of some parts of the country. We have heard stablemen, even in London, affirm that maggots "eat away the disease"; and the idea certainly still lingers in many places remote from the metropolis. The prosecution strikingly illustrates the degree of ignorance of the most rudimentary hygiene and pathology that may still be met amongst owners of stock; and it suggests various reflections. One is of the amount of work that lies before veterinary surgeons in educating stock-owners, and the national saving they may effect by doing so. Another and less pleasant one is of the almost insuperable difficulties that confront us in dealing with clients of the lower grade. Many men own animals who are not fit to be entrusted with them; and we have to do our best to lessen their unfitness.

THE SCHOOLS.

Our schools have now recommenced work; and perhaps it would be better not to ask how many new students have been enrolled. We may be quite certain that the total number must be a small one. The effect of this will not, of course, be felt for some years hence; and to a certain extent it will not be disadvantageous. There is sure to be much congestion in the profession after the war; and it is some relief to know that this will not be intensified by an overplus of new graduates. But, from every other point of view, the lack of students is deplorable. We know what its effect will be upon the finances of the R.C.V.S. and the schools; and there is some reason to fear an effect upon the national resources. It seems quite possible that, half a dozen years hence, our schools may not be able to produce a sufficiency of new graduates of the requisite calibre to meet the increased demands of the public services. That, if it should happen, would be a national misfortune.

INFECTIOUS PARAPLEGIA.

Under this heading in Wallis Hoare's "System of Veterinary Medicine," Vol. I., it states, "So far as we are aware the affection has not been observed in the British Isles." Evidently up to the present time this disease has been very rare. The following notes may be of interest, as 11 cases occurred in one outbreak. Some of the animals were mares with foals and, strange to say, none of the latter took the disease although they were running with their dams.

Symptoms. The animal would first be noticed down and unable to rise, or partially paralysed behind, walking with reeling gait; temperature sub-normal (99° F.), pulse slightly accelerated. Animals showed tenderness over the region of the poll, and pain when the head was raised; the conjunctiva and vaginal mucous membrane deeply injected, and, in the course of a few days, a very slight discharge from the eyes, nose, and vagina. Muco-enteritis is present, and the fæces are passed only by the aid of enemata; the bladder is paralyses and urine has to be drawn off with catheter, and is clear. Nephritis and cystitis usually follow in two or three days from the onset, when micturition is frequent in small quantities, the bladder being now contracted.

The urine is now thick and gelatinous, containing albumen, blood clots, and muco-purulent matter. The vulva is greatly swollen and the swelling extends down the perineum: in the horse the penis hangs down and the testicles are drawn up tight and are continually twitching. In acute cases death takes place within twelve hours with no other symptoms than the paraplegia and complete collapse.

Post-mortem on animal ill 36 hours. Blood dark and tarry: heart showed myocarditis with ecchymoses. Vulva and vagina greatly swollen and almost black, acute cystitis, acute pyelo-nephritis; about a tablespoonful of snow-white pus in the pelvis of each kidney. Very slight enteritis; meninges of cord inflamed and acute polio-myelitis—the grey matter being quite soft.

The disease in very acute cases causes death in 21 hours, while in others the period of illness lasts from 10 to 14 days, when convalescence ensues; but it may take three weeks to two months for all signs of the paraplegia to disappear.

Should this disease become at all prevalent it is one that should be scheduled by the Board of Agriculture, as the losses occasioned are severe but it could be easily controlled by restrictions. The period of incubation is in all probability about ten

days, and the chief mode of infection is by one animal smelling another.

These notes may be of interest at a time when our professional papers appear somewhat short of cases, owing no doubt to the fact that the best of our profession are serving their King and country.

It is possible this is one of those peculiar diseases mentioned by Mr. J. E. Fowler, M.R.C.V.S., of Arizona, U.S.A., in this week's number of *The Veterinary Record*.

Sept. 30. M.R.C.V.S.

UNDIAGNOSED.

The following may be interesting.

Four pet dogs in one large house: two large Poms and two Pekingese. In the first instance the blue Pom. came home after having been away "somewhere" for about half-an-hour, and the servant's description was as follows:—

"He came home as if he might have been given something intoxicating. He was weak on his legs and he could not see properly. He came to my room at night to sleep on the foot of the bed, and when I called him he started to jump as soon as he had taken two steps inside the door. He was trying to jump on to the bed from the time he entered the room, but my bed was at the farther end; that made me think his sight was affected.

He could not walk up and down the stairs without falling from one step to another. He had two attacks like this."

"About a week afterwards, the same Pom. was out in the pony cart when he suddenly took to yelling, and dashed away in the wrong direction with his head down, and he did not return home till 8.30 at night.

Exactly a week after the white Pom. had a similar attack, rushing round the garden, screaming, and running its head into anything and everything. Much weakness afterwards."

Then one of the Pekingese, about a week afterwards, was seized with sudden stiffness, as if poisoned by strychnine, and remained very restless till bed time, when it was given some morphia.

Just about a week afterwards the white Pom. had fits—three in one day; and four days after had nine in one day. For a fortnight or so his favourite posture was to repose on his elbows or to stand up on hind legs.

It seems so strange that three out of four dogs in one house should exhibit much the same symptoms, and I am unable to arrive at any reasonable solution.

The treatment consisted of mild aperients, bromide and morphia: low diet, semi-darkness and perfect quietude. Exactly a week elapsed between each of the three cases.

Note.—All the dogs were in the habit of invading the pony's loose box, which was bedded with peat moss, and devouring pieces of excreta, etc. I wonder whether this could have been the cause?

W. W.

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

[National V.M.A.—Northern Branch.]

The quarterly meeting was held at Birmingham on Wednesday, August 23rd, Mr. J. Malcolm, Birmingham, presided, and there were also present Messrs. F. L. Gooch, Stamford; J. J. Burchnall, Barrow-on-Soar; H. S. Reynolds, Daventry; T. Slipper, Sutton Coldfield; J. Martin, Wellington; W. H. Brooke, Handsworth; L. S. Tipper, W. White, J. Young, C. J. Byner, S. M. Woodward, Birmingham; J. O. Powley, Sutton Coldfield; J. Cormack, Coventry; A. Over, Rugby; T. Chambers, Dudley; W. Dale, Coventry; F. H. Gibbings, Nottingham; A. B. Forsyth, Cannock; R. Murray, Rugeley; and the Hon. Sec., Mr. H. J. Dawes.

The visitors present were: Dr. Penhale, West Bromwich; Messrs. A. Blake, Rangoon; F. Atkinson, Chief Sanitary Inspector of Dudley; C. Burton, Deputy Superintendent of Birmingham Markets; E. Hothersall, Chief Meat Inspector for Birmingham, and W. H. Brown, *Veterinary Record*, London.

Apologies for unavoidable absence were received from Professor Mettam, Messrs. D. Forwell, F. B. O. Taylor, F. V. Steward, P. C. Woolston, E. Ringer, John Blakeway, S. J. Marriott, C. E. Dayus, R. L. Phillips, F. W. Barling, T. J. Brain, W. S. Carless, R. Hughes, R. C. Trigger, W. L. Gascoigne, and others.

The minutes of the previous meeting were duly confirmed.

New Member. On the motion of the Hon. Sec., seconded by the President, Mr. J. O. Powley, of Sutton Coldfield, veterinary inspector of the Board of Agriculture, was elected a member of the Association.

Report of Council.

The Council reported upon the result of a meeting, previously held, at which it was recommended:

(1) That the next quarterly meeting be held at Birmingham;

(2) That the chief business on the agenda be the production of interesting cases and specimens by members, and discussions thereon; and

(3) That a letter of sympathy be sent to Mr. F. W. Barling, of Bartestree Court, Hereford, in his illness.

This report was unanimously adopted and the recommendations agreed to.

Visit to Birmingham City Meat Market.

A visit of inspection, kindly arranged by the President, was paid to the Birmingham City Meat Market and Public Abattoirs, under the guidance of Mr. Burton and Mr. Hothersoll. This wonderful instance of the municipal enterprise of the great metropolis of the Midlands was viewed under the most favourable conditions, and everything that was seen greatly impressed the visitors. Working in conjunction with the city veterinary department, of which the esteemed President of the Association is the administrative chief, the steps that are taken to ensure a pure meat supply to Birmingham were closely examined, and in all its different phases there was much that was interesting and instructive. The use made of offal was particularly interesting, especially the desiccation of blood for manure, the preparation of serums, and the manufacture of gut strings for various purposes, some of which work is displacing a German industry that was a source of much profit to our enemies before the war.

The members afterwards re-assembled at the Grand Hotel to hear an address by Mr. A. Blake, Chief Veterinary Officer of Rangoon, descriptive of Veterinary Public Health work in the Burmese capital.

VETERINARY WORK IN RANGOON.

Mr. Blake has spent eighteen years in the East, and from a small beginning has evolved a large and important Veterinary department, which now includes all matters relating to both day and night conservancy, the removal and disposal of rubbish, the abattoirs, cattle market, cattle pounds, the inspection of meat, the suppression of illicit slaughtering, the Bullock Depots (containing 1600 working animals and other livestock, and 500 carts, belong to the Corporation), the working of the Contagious Diseases of Animals, and Control of Milk Acts.

Dealing first with contagious diseases, some surprising statistics were quoted, especially with regard to glanders which is apparently very common in the East. Some six or seven years ago it assumed the form of a virulent epidemic, and it was decided to inoculate every horse in the place. At that time the cases, discovered both clinically and by the Mallein test, amounted to 902 a year. The numbers fell in the following years to 436, 234, 74; and in the last year for which statistics were available the number was only 18, which Mr. Blake thought was a triumph for the efficacy of the Mallein test, and spoke well for the thoroughness with which his assistants carried out the measures of disinfection.

Epizootic lymphangitis is fairly common, but had been reduced to an absolute minimum. Compensation is allowed for glanders but not for epizootic lymphangitis.

Surra is always described in the text books as being prevalent to a large extent in Burmah and Siam, and formerly was frequently found in the large hackney carriage stables in Rangoon, but owing to the better sanitary measures adopted in the building of stables, which prevent biting flies from breeding there, far fewer cases are now met with.

Cases of anthrax average from thirty to forty a year. He suggested a more strict control over the importation of hides from countries in which anthrax, foot-and-mouth disease and cattle plague were prevalent.

At present if he refuses a certificate of freedom from these diseases, one could easily be obtained from the Consul of the country to which they were to be exported.

Cattle plague. like the poor, is always present, but it usually appears in very virulent cycles every five to seven years. In the districts away from towns the Civil Veterinary Department has made great strides with inoculation work, and would do a great deal more if they had more men; but it could easily be understood that with only the three members of that Department for a district of the size of the Province of Burmah (which measured 236,000 square miles) the task is beyond the scope of human possibility. In the Municipal Stud of 1600 bullocks at Rangoon inoculation was resorted to frequently, and the outbreaks of plague are few and far between, the mortality very low—not 5 % occurring a year.

Foot-and-mouth disease is endemic, and in Mr. Blake's opinion, more often communicated by the straw than is usually thought. Burmah and Siam depend very largely on rice, which is grown under water. At the end of the rains the water dries away and the paddy is cut, and trodden out by bullocks, He had frequently seen animals suffering from foot-and-mouth disease at this work, and it is, therefore, very patent that either the straw or the corn could easily be infected. The former would then be the origin of an outbreak when brought to a town for consumption, and the latter, he thought, could account, *via* rice meal, for some of the outbreaks of the disease in this country; and possibly cattle plague is similarly spread. It was, he thought, worth the consideration of the Authorities in this country, who were sometimes puzzled at an outbreak, to enquire whether any rice meal had been used.

Rabies is a common disease, and the means of combating it is the destruction of pariah dogs which infest the country and which flourish, particularly as no Buddhist would take the life of any of them. The destruction was carried out by the Veterinary Department; last year, the number of bodies produced was 6654. It could easily be understood that with the strong Buddhist teaching against the taking of life the work of dog-poisoning is very risky, as the people often turn out and stone the men sent to do it.

'Abattoirs.

Rangoon possesses an excellent system of public abattoirs, no private slaughtering being allowed. Climatic conditions render daily slaughtering necessary. Animals for slaughter are first passed as fit, then kept under observation for four days, and the carcases thoroughly examined after slaughter. The detention for four days in the lairs has been found necessary from a meat protection point of view, and also to prevent stolen animals being slaughtered and so putting a premium on cattle theft.

The speaker then quoted the latest figures from his annual report of animals rejected as unfit for slaughter:—

Buffaloes	% 16.0	Calves	% 15.0
Bullocks	22.0	Sheep	0.2
Cows	19.3	Goats	1.4

and said that in the same year the number of animals slaughtered was 96,141, exclusive of pigs. Pigs are an abomination to the Mahomedans, who do all the cattle and sheep slaughtering, and so the pig slaughterhouse was built at the farthest possible distance from that for cattle and sheep—a distance of about seven miles. Rangoon possesses the finest new pig slaughterhouse in the East, and this slaughterhouse was briefly described by the speaker.

He estimated that the clear profit from abattoirs was roughly £15,000, and said rhat he had always found his governing body ready and willing to acceed to any reasonable requests for improvements and alterations if he could show a corresponding probable increase in revenue.

Knackery. This institution has been provided for dealing with all dead animals, which formerly were taken outside the town and given to the vultures. Now all carcases were conveyed to the knackery, skinned, the hides sold, and the bodies cremated. At one time it was suggested to instal a "rendering process"—one in which the bodies are treated to recover all the fats, etc., and the residue made into artificial manure; but his Committee had agreed with him that total destruction was the better way of dealing with an uncertain quantity of material and in a country in which contagious diseases abounded.

Conservancy and rubbish disposal. Referring to his responsibility for the cleansing of the streets, and the removal and disposal of rubbish, Mr. Blake said that it might be cantended that this was outside the scope of a Veterinary Officer's work, but when asked to undertake it he did so willingly, and could not help thinking that when veterinary surgeons were not inclined to accept responsibility and extend their usefulness they could not expect to take their proper place in public work.

In this Department 1600 working bullocks and 400 carts were turned out daily, and approximately from 800 to 1000 tons of rubbish were removed daily from the streets. This rubbish was now used for reclaiming land above water level which was otherwise practically useless. This land became in time very valuable, and now that a regular system of cultivation was carried out it proved most lucrative, as many as ten crops of grass a year being obtained from it.

The speaker then gave details as to the most frequent causes of admission to hospital in this stud, and also as

to the average life of bullocks employed at cart work in towns.

The address had to be considerably curtailed, owing to shortness of time, but it was generally agreed that a more interesting statement of veterinary enterprise had not been listened to by members of the Association.

The PRESIDENT voiced the feelings of all present when he said they were very much indebted to Mr. Blake for giving them such an interesting address. He had not confined himself solely to veterinary work in Rangoon, but had been ready to put his hand to useful hygienic work wherever required. He thought that was an object lesson for the practitioner at home, The President invited questions, which, he was sure Mr. Blake would be willing to answer.

Mr. MARTIN said he was wondering what breed the cattle in Rangoon were. Did he import cattle from this country, and if so, what was the most successful to cross with? What was the weight of cattle that drew the heavy carts shown in the photagraphs which Mr. Blake had passed round?

Mr. GOOCH said the principle thing which impressed him was the very useful power which the veterinary surgeon wielded in Rangoon. He thought the mother country might learn some very useful lessons from a veterinary point of view from what had been done in Rangoon. Not only in the Colonies, but also in England, veterinary surgeons had been too stiff-necked. He very much admired the policy of destroying all carcases of animals that had died, because although it might entail some loss of revenue, it insured that contagious disease did not spread. He agreed that the profession should take up through their different societies the suggestion of the essayist and ask the Government of this country to legislate for a more perfect system of overhauling hides that were imported from abroad, and especially from countries where disease was known to exist. It had long been his opinion that one source of contagion in cases of foot-and-mouth disease in this country was rice meal, which was being largely used on account of its comparative cheapness. He thought it would be a good thing if they had some power to condemn carcases in this country. Mr. Blake was to be congratulated on the splendid work he had done in Rangoon, and upon getting veterinary science recognised at its proper value.

The HON. SEC. said it was really surprising what an amount of power the veterinary officer possessed in Rangoon. The extinction of private slaughter houses was something which might be done with advantage in this country. When they considered what they had seen at the public abattoirs in Birmingham, where everything was under proper control, they could not help thinking not only what a tremendous amount of waste must result from the existence of thousands of private slaughter-houses up and down the country, but also what a source of danger they must be to the public health. How Mr. Blake managed to keep in close touch with all the various phases of his work was a little surprising, and it must be difficult for him, too, to avoid friction among the different religious sects in Burmah. The powers that be in Rangoon evidently knew when they had a good man, and they ought to be very grateful for what Mr. Blake had accomplished during his long tenure of office.

Mr. BROOKE asked whether those races who did not agree with the slaughtering of animals were vegetable eaters? He also wanted to know what sort of animals were affected by surra.

Mr. CORMACK said what impressed him most was the great benefit that resulted from running a number of schemes under the control of one person. Where the responsibility was not divided it was seen how satisfactory the results were. He thought Rangoon was to be congratulated on the speedy manner in which it had got rid of contagious diseases, especially glanders. There would be great difficulty in carrying out inoculation with mallein on all the horses in this country, as was done in Rangoon, but there was not much doubt as to the efficacy of it. He doubted whether we could get authority in this country to test every horse, but it was the obscure cases that kept the disease alive in a district.

Mr. BYNER said he should like to know if horses were used in Rangoon for heavy purposes.

Mr. MARTIN said he should like to ask another question. What was the horse population in Rangoon? To have 800 cases of glanders in one year seemed a very large percentage. He supposed Mr. Blake would have plenty of European help, both professional and otherwise.

Mr. POWLEY said Mr. Blake must have worked hard to have acquired such tremendous administrative power. In this country to be a veterinary surgeon seemed to be a bar to administrative rank. At least he had generally found it so. He should like to hear something about the method of treating foot-and-mouth disease in Rangoon.

Mr. BURCHNALL said one could not help being struck with the comprehensiveness of Mr. Blake's work. He must be a very popular man in Rangoon.

Mr. BLAKE: A very unpopular man, I can assure you, in many quarters.

Mr. BURCHNALL added that he was interested in the number of cases of sore necks, and he could not help wondering whether it would not be possible to put a collar on the bullocks, something like a horse collar.

The PRESIDENT also asked a few questions. Mr. Blake said 20 per cent. of the cattle were rejected for slaughter, but what abaut the number rejected after slaughter? As to the shoeing of bullocks, he understood Mr. Blake to say that they had to be cast first, but was not that the universal way of shoeing bullocks? Birmingham was like Rangoon in one respect, namely, that they did not allow any animals to be slaughtered on unlicensed premises, but Rangoon went a step further and claimed all animals that died, which he should imagine was a very good thing, especially in that climate and country. Another thing that struck him was the marvellous fertility of the land he had reclaimed. Ten crops of long grass in five months was such rapid growth that they could scarcely appreciate it. People were thankful in England if they got two good crops in a season.

REPLY.

Mr. BLAKE said that when he first started to tackle glanders six years ago, he paid compensation, though it was not in the Act, to the gharri-wallahs, or small cab people, but it was quite discretionary, and if he found there had been culpable carelessness he did not pay. The first year he paid about 21,000 rupees in compensation, and last year only 410.

As to the cattle, he knew of none better than the Burmah breed. It was a fine working animal, and he had some standing 14 hands which worked the whole week long, carrying two tons on a spring van. The average load was about three-quarter ton, and an animal would do anything from two to five trips a day. The Burmese did not drink milk, and consequently the pure Burmese cattle were in a state of nature, the calf taking all its mother's milk, as a lamb might do in this country. It was one of the best examples of evolution he knew of. The Indians, who were a great milk-drinking people, had taken over Indian cattle and crossed them with the Burmese cattle. They were much larger in bone and the cross gave an extremely good working bullock. A few people had been unwise enough to import English cattle from Australia, and the

progeny, from a working point of view, was not satisfactory. The animals lost the hump very quickly, which was a disadvantage. Harness was not used, and the hump was necessary for the adjustment of the yoke. The weight of the bullocks was about 1500 lb.

The horse population in Rangoon was between 10,000 and 12,000, not reckoning the military police ponies and the Government establishment.

The slaughtering of animals was in the hands of Mahommedans, so far as cattle and sheep were concerned; and the Burmese would eat meat if someone else had killed it. The Hindoos would eat goat, but not cows, which were sacred animals to them. The religious question was very acute out in the East, and the greatest tact was necessary to avoid friction between the different sects. Pig slaughtering was in the hands of the Chinese, and the Burmese would eat pork so long as someone else killed it.

At the close a hearty vote of thanks was accorded to Mr. Blake for his most interesting address.

Votes of thanks were also passed to Mr. Hothersoll and Mr. Burton, of the Birmingham Markets Department, for acting as guides during the afternoon's visit, and to the Midland Products Company for allowing the members to inspect their premises and witness their operations, and the Linde Refrigerating Company for demonstrating their system of cold storage, and the safe and cleanly method of cutting up frozen carcases with the band saw.

The members took tea together, as usual.

H. J. DAWES, F.R.C.V.S., Hon. Sec.

THE ANALYSIS OF LIVING MATTER THROUGH ITS REACTIONS TO POISONS.

The following forms the major portion of an address delivered to the Physiological Section of the British Association for the Advancement of Science, at Newcastle-on-Tyne, by A. R. CUSHNY, M.A., M.D. ABERD., F.R.S., Professor of Pharmacology, University College, London; President of the Section.

"In recent years great advances have been made in the chemical examination of the complex substances which make up the living organism, and still greater harvests are promised from these analytic methods in the future. But our progress so far shows that while general principles may be reached in this way, the chemistry of the living organ, like the rainbow's end, ever seems as distant as before. And, indeed, it is apparent that the chemistry of each cell, while possessing general resemblances, must differ in detail as long as the cell is alive. No chemistry dealing in grammes, nor even microchemistry dealing in milligrammes, will help us here. We must devise a technique dealing with millionths to advance towards the living organism. Here I like to think that our work in pharmacology may perhaps contribute its mite; perhaps the action of our drugs and poisons may be regarded as a sort of qualitative chemistry of living matter. For chemical investigation has very often started from the observation of some qualitative reaction, and not infrequently a good many properties of a new substance have been determined long before it has been possible to isolate it completely and to complete its analysis. For example, the substance known now as tryptophane was known to occur in certain substances and not in others long before Hopkins succeeded in presenting it in pure form. And in the same way it may be possible to determine the presence or absence of substances in living tissues, and even some of their properties, through their reaction to chemical reagents, that is, through the study of the pharmacology of these tissues. A simple example may render the point clearer. It is possible that if the toxicity of the saponins to different cells were accurately known, the relative importance of the lecithins in the life of these cells might be estimated, and this might give a hint to the chemist in approaching their analysis. I do not claim that pharmacological investigation can at present do much more than the qualitative testing of the tyro in the chemical laboratory, but even a small advance in the chemistry of living matter is worthy of attention.

All forms of living matter are affected by certain poisons, and some of these have obvious chemical properties which suggest the method of their action; thus the effects of alkalies and acids and of protein precipitants hardly need discussion. Others, such as quinine and prussic acid, which also affect most living tissues, have a more subtle action. Here it is believed that the common factor in living matter which is changed by these poisons is the ferments, and quinine and prussic acid may therefore be regarded as qualitative tests for the presence of some ferments, notably those of oxidation, and, in fact, have been used to determine whether a change is fermentative in character or not. Formaldehyde was stated by Loew to be poisonous to living matter through its great affinity for the NH_2 group in the proteins, a suggestion which has perhaps not received enough attention of late years, during which the importance of this group in proteins has been demonstrated. The toxicity of other general poisons, such as cocaine, is more obscure. But what has been gained already in this direction encourages further investigation of the action of the so-called general protoplasm poisons and further effort to associate it with the special constituents of the cell.

BODIES ACTING ON THE NERVOUS SYTSEM.

In other poisons the action on the central nervous system is the dominating feature, and among these the most interesting group is that of the simple bodies used as anæsthetics and hypnotics, such as ether, chloroform, and chloral. The important use of this group in practical medicine has perhaps obscured the fact that they act on other tissues besides the central nervous system, though we are reminded of it at too frequent intervals by accidents from anæsthesia. But while they possess this general action, that on the nervous tissues is elicited more readily. Not only the nerve cell, but also the nerve fibre reacts to these poisons, as has been shown by Waller and others. The selective action on the nervous tissues of this group of substances has been ascribed by Overton and Meyer to the richness in lipoid substances in the neurons, which leads to the accumulation of these poisons in them, while cells containing a lower proportion of lipoid are less affected. In other words, Overton and Meyer regard these drugs as a means of measuring the proportion of lipoids in the living cell. Too many exceptions to the rule have to be explained before the action of these bodies can be attributed wholly to their coefficients of partition between lipoids and water. But whatever the mechanism of the characteristic action, these substances in certain concentrations may be regarded as tests for the presence of nervous structures and have been employed for this purpose.

Other bodies acting on the nervous system have a much narrower sphere. Morphine and strychnine, for example, appear to be limited to the region of the nerve cells, but there is still doubt whether they affect the cell body alone or the synapses between certain of its processes. They have not been shown to act on peripheral nervous structures in vertebrates, nor on any but specific regions of the central nervous system. Nor has it been established that they affect inverte-

brates. The substance with which they react is obviously limited by very narrow boundaries around the nerve cell.

More interest has been displayed in recent years in the alkaloids which act on the extreme terminations of various groups of nerves. These are among the most specific reagents for certain forms of living matter which we possess. Thus, if an organ reacts to adrenalin we can infer that it contains the substance characteristic of the terminations of sympathetic fibres with almost as great certainty as we infer the presence of a phenol group from the reaction with iron. And this sympathetic substance can be further analysed into two parts by means of ergotoxin, which reacts with the substance of the motor sympathetic ends, while leaving that of the inhibitory terminations unaffected. Similarly, the endings of the parasympathetic nerves are picked out with some exceptions by the groups represented by atropine and pilocarpine, and here again there must be some definite substance which can be detected by these reagents.

Further, some light has been thrown on, at any rate one aspect of these nerve-end substances, by the observation that they all react to only one optical isomer in each case. Thus, the dextro-rotatory forms are ineffective in both atropine and adrenaline, and this suggests strongly that the reacting body in the nerve-ends affected by these is itself optically active, though whether it bears the same sign as the alkaloid is unknown. This very definite differentiation between two optical isomers is not characteristic of all forms of living matter. For example, the heart muscle seems to react equally to both lævo- and dextro-camphor. The central nervous system contains substances which react somewhat differently to the isomers of camphor and also of atropine, but the contrast is not drawn so sharply as that in the peripheral nerve-ends.

Another test alkaloid is curarine, the active principle of curare, which in certain concentrations selects the the terminations of the motor nerves in striated muscle as definitely as any chemical test applied to determine the presence or absence of a metal.

RELATIONSHIPS IN REACTIONS.

The pharmacologist, as an explorer in the analysis of living matter, also finds that a single poison may affect a number of structures which appear to have no anatomical or physiological character in common. But as the chemist recognises that the group of metals which react in the same way to his reagent have other points of resemblance, so perhaps we are justified in considering that the effects of our poison on apparently different organs indicate the presence of some substance or of related substances in them. A great number of instances of this kind could be given, and in many of these the similarity in reaction extends over a number of poisons, which strengthens the view that the different organs involved have some common reacting substance.

One of the most interesting of these is the common reaction of the ends of the motor nerves in striated muscle and of the peripheral ganglia of the autonomic system. It has long been known that curare and its allies act in small quantities on the terminations of the motor nerves in ordinary muscle, while larger amounts paralyse conduction through the autonomic ganglia. More recently it has been developed by the researches of Langley that nicotine and its allies, acting in small quantities on the ganglia, extend their activities to the motor ends in large doses. Some drugs occupy intermediate positions between nicotine and curare, so that it becomes difficult to assign them to either group. These observations appear to leave no question that there is some substance or aggregate common to the nerve ends in striated muscle and to the autonomic ganglia. As to the exact anatomical position of this substance, there is still some difference of opinion. Formerly it was localised in the terminations of the nervous fibres in the muscle and ganglia, but Langley has shown that in the latter the point of action lies in the ganglion cell itself, and his researches on the antagonism of nicotine and curare in muscle appear to show that the reacting substance lies more peripherally than was supposed, perhaps midway between the anatomical termination of the nerve and the actual contractile substance.

Another close relationship is shown by the reaction of the glucosides of the digitalis series on the heart and vessels. These all act on the muscle of the heart, and in higher concentration on that of the vessel walls. There must, therefore, be a common base in these which is affected by the drugs. And the existence of this is perfectly intelligible in view of the fact that the heart is developed from the vessels. A more obscure relationship is shown by the reaction of this group to the inhibitory cardiac centre in the medulla, which is thrown into abnormal activity by their presence in the blood, as has been shown alike by clinical and experimental observations. A similar relation is shown by the common reaction of the heart muscle and the vagus centre to aconitine and some other related alkaloids. On the other hand, the saponin series, which shows a closer relationship to the digitalis bodies in the heart muscle, is devoid of its characteristic action on the medulla. The reacting substance in the heart is thus capable of responding to digitalis, saponin, and aconitine, while that in the vagus centre can associate only the first and last and is not affected by the saponins; the common reactions indicate that the two are related, while the distinctive effect of saponin shows that they are not identical. A similar relationship may be drawn from the action of morphine and the other opium alkaloids on pain sensation, on respiration, and on the movements of the alimentary tract. Exact determinations of the relative power of these alkaloids in these regions are not at our disposal as yet, but sufficient is known to suggest that while morphine affects a common substance in the medullary centre and the intestinal wall, the other members of the series act more strongly in one or other positlon.

It was long ago pointed out that caffeine affects both kidney and muscle cell, and Schmeideberg has attempted to correlate the intensity of action of the purine bodies at these points and to measure the probable diuretic action by the actually observed effect on the contraction of muscle. Other reactions of the kidney suggest a relationship to the wall of the bowel. For example, many of the heavy metals and some other irritant bodies act strongly on the kidney and bowel, and again, according to one view of renal function, many of the simple salts of the alkalies affect the kidney in exactly the same way as the bowel wall. This last may, however, be due to the physical properties of the salts, and the likeness in reaction to those of kidney and bowel, which is striking enough, may arise from a likeness in function of the epithelium rather than from any specific relationship to the salts which is not common to other forms of living matter."

"The common reaction of tissues, which I have so far ascribed to their possessing some substance in common, may arise from community of physical relationship, and I wish to avoid the implication borne by the word "substance," which I have used in the widest sense, such as is justified perhaps only by its historical employment in theological and philosophical controversy. The reaction of living tissue to chemical agents may arise from a specific arrangement in its molecule, but may equally be attributed to the arrangement of the molecules themselves. And the curious relationships in the reactions of different tissues may indicate, not any common chemical factor, but a common arrangement of

the aggregate molecules. We are far from being able to decide with even a show of probability which of these alternatives is the correct one, and my object to-day has been to draw attention to these relationships rather than to attempt their elucidation. Hitherto the speculative pharmacologist has been much engaged in comparing the chemical relationship of the drugs which he applies to living tissues; much useful knowledge has been incidentally acquired, and the law has been formulated that pharmacological action depends directly on, and can be deduced from chemical structure. This view, first elaborated in this country, has in recent years shared the fate of other English products in being advertised from the housetops and practically claimed as the discovery of more vociferous investigators. On examining the evidence, old and new, one cannot help feeling that attention has been too much directed to those instances which conform to the creed, while the far more numerous cases have been ignored in which this so-called rule fails. The difficulties are very great; For example, what chemical considerations can be adduced to explain why the central nervous tissues react differently to bromide and chloride, while to the other tissues these are almost equally indifferent; or how can the known chemical differences between potassium and sodium be brought into relation with the fact that they differ in their effects in almost every form of living tissue?

Less attention has been paid to the other factor in the reaction, the properties of the living tissue which lead one cell to react to a poison, while another fails to do so. Much needs to be done before any general view can be obtained. Detailed examination of the exact point at which poisons act, and much greater knowledge of the physical characters of the drugs themselves, and of the relation of colloid substances to these characters, are needed. We must attempt to classify living tissues in groups not determined by their morphological or even functional characters, but by their ability to react to chemical agents. Advance is slow, but it is continuous, and if no general attack on the problem is possible as yet, we are at any rate beginning to collect information as to the position of the different groups to be attacked. And when a sufficient number of these qualitative reactions have been ascertained for any form of living matter, it may be possible for some Darwin to build a bridge from the structural chemistry of the protein molecule to the reactions of the living cell. My purpose to-day has been to indicate how the study of the effects of drugs on the living tissue may also contribute its mite towards the great end.

ROYAL VETERINARY COLLEGE, LONDON.

LIST OF MEDALS, CLASS PRIZES, ETC., AWARDED AT THE OPENING OF THE SESSION 1916–17.

COLEMAN PRIZES.—Silver medal: Mr. D. A. Gillmor and Mr. S. C. J. Bennett (aeq.); Certificate of merit: Mr. L. E Prichard.

CENTENARY PRIZES.—Class A: Mr. R. E. Glover; Class B: Mr. J. McCunn; Class C: Mr. F. C. Scott; Class D: Mr. S. C. J. Bennett.

ROYAL AGRICULTURAL SOCIETY'S MEDALS.—Silver medal: Mr. S. C. J. Bennett; Bronze medal: Mr. D. A. Gillmor.

RALLI PRIZES IN PRACTICAL SURGERY.—1st Prize: Mr. D. A. Gillmor; 2nd Prize: Mr. L. E. Prichard; 3rd Prize: Mr. T. L. Wright.

Clinical Prizes.—Class A.—1st Prize: Mr. W. J. Leyshon; 2nd Prize: Mr. W. J. Parry; 3rd Prize; Mr. A. Crabb.

Class B.—1st Prize: Mr. J. McCunn; 2nd Prize; Mr. T. H. Jones; 3rd Prize: Mr. W. A. Williams.

Class C.—1st Prize: Mr. L. P. Pugh; 2nd Prize: Mr. T. LeQ. Blampied; 3rd Prize: Mr. H. Cooper.

Class D.—1st Prize: Mr. D. A. Gillmor; 2nd Prize: Mr. S. C. J. Bennett; 3rd Prize: Mr. L. E. Prichard and Mr. T. L. Wright (aeq.).

Class Prizes.—Class A.—Chemistry and Toxicology—1st Prize: Mr. R. E. Glover; 2nd Prize: Mr. J. R. Pratt; Practical Chemistry: 1st Prize: Mr. W. J. Leyshon; 2nd Prize: Mr. J. W. M. Hinton; Biology: 1st Prize: Mr. R. E. Glover; 2nd Prize: Mr. W. J. Leyshon; Minor Anatomy: 1st Prize: Mr. R. E. Glover; 2nd Prize: Mr. W. J. Leyshon.

Class B.—Anatomy: 1st Prize: Mr. T. H. Jones; 2nd Prize: Mr. J. McCunn; Physiology. 1st Prize: Mr. J. McCunn; 2nd Prize: Mr. T. H. Jones; Histology: 1st Prize: Mr. J. McCunn; 2nd Prize; Mr. R. W. Down.

Class C.—Pathology: 1st Prize: Mr. F. C. Scott; 2nd Prize: Mr. T. J. Lewis: Materia Medica: 1st Prize: Mr. F. C. Scott; 2nd Prize: Mr. E. A. Rucker; Hygiene: 1st Prize: Mr. F. C. Scott; 2nd Prize: Mr. L. P. Pugh.

Class D.—Veterinary Medicine: 1st Prize: Mr. S. C. J. Bennett; 2nd Prize: Mr. D. A. Gillmor; Surgery: 1st Prize: Mr. S. C. J. Bennett; 2nd Prize: Mr. D. A. Gillmor.

ARMY VETERINARY SERVICE

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, Sept. 29.

REGULAR FORCES. ARMY VETERINARY CORPS.

To be temp. Lieuts:—E. S. W. Peatt (Sept. 11): W. R. McKinna (Sept. 18).

Oct. 2.

Temp. Lt. to be temp. Capt.:—J. C. Collings (Sept. 7).
Temp. Lt. R. Garland relinquishes his commn. (Oct. 3).
To be temp. Lieut.:—J. J. Condon (Sept. 11).

TERRITORIAL FORCE. ARMY VETERINARY CORPS.

Oct. 3.

Lieut. to be Capt.:—F. W. Somers (Sept. 27).

CANADIAN A.V.C.

Oct. 3.

Lieut. to be temp. Capt.:—H. H. Bishop (Aug. 9).

The A.V.C. Comforts Fund.

Dear Sir,—I am forwarding list of contributions and gifts received for A.V.C. Comforts Fund, hoping you can give space for insertion in this week's *Veterinary Record*.

May I again ask all those who have work in hand for the Comforts Fund to forward on parcels as soon as possible, as I am anxious to get consignments despatched.—Yours truly,

ADELAIDE M. MOORE.

Strathyre, Parsifal Road,
Hampstead, N.W. Oct. 5.

Further Contributions to October 4.

Mrs. H. B. M. Mackenzie (3rd contribution)	£5	0	0
Mrs. E. R. C. Butler (2nd „)	2	2	0
G. R. Lancaster, Capt. A.V.C.	1	1	0
A. A. Pryre, Capt.	2	2	0
per Major R. C. Cochrane, A.V.C., contributions, No. 14 Vety. Hospital	14	6	9½
per Major H. Kirby, A.V.C., contributions, No. 6 Vety. Hospital	4	0	0

per Capt. J. H. Taylor, A.V.C.,
contributions, No. 4 Mobile Vety. Sect. 12 6
per Mrs. Rutherford, Mr. H. M. Hayes 1 1 0

Parcels received from :

Mrs. Hibbard : Socks and Mufflers
Miss Pritchard : Socks Mrs. Fearnside : Socks
Lady Maitland : Socks, mufflers, wither pads
Miss Wright : Mittens, mufflers
Mrs. Jack Willett : Mittens, mufflers
Mrs. Rutherford : Socks Mrs. Plunkett : Socks.
per Mrs. Rutherford :
Mrs. Ewing Johnston (Belfast) : 100 pairs socks, 25 hussiffs, handkerchiefs (from Association Women Workers, Hilden, Lambeg, Co. Antrim)
from The St. Albans Work Party, Streatham : Mufflers, mittens, socks, flannel shirts
Miss Coventry : Books, papers, etc.

OBITUARY.

W. A. STAINTON, M.R.C.V.S., 409 Hornsey Rd., London, N. Graduated, Lond : Dec., 1889 ; Felllow, May, 1898. Mr. Stainton died on September 25th, aged 48.

J. T. MORRIS, Registered "Existing Practitioner," 57 Hook Road, Epsom, Surrey, died on September 13, aged 75.

THOMAS J. SIMPSON, M.R.C.V.S., Fullbrooke, Ruthin, Denbighshire. H. & A. S., 1847. Graduated, N. Edin : Oct. 1881.

Mr. Simpson died on May 10th, at Colchester, while acting as Civil Veterinary Surgeon to the 66th (East Lancashire) Division.

[It appears now that by some inexplicable accident, the notice of Mr. Simpson's death was not printed in usual course. Mr. Simpson was on service at the time of his death, we therefore insert the note now, and much regret the previous omission.]

ARTHUR WILLIAM HILL, late Secretary R.C.V.S., St. Romelo, Sunte Avenue, Lindfield, Sussex.

Mr. Hill was Secretary to the R.C.V.S. for 27 years, 1880–1907. He was taken ill suddenly with intestinal trouble, and was removed at once to the Sussex County Hospital, Brighton, where he was operated upon, but succumbed shortly after. He passed away peacefully on Thursday, Sept. 28th.

With a regret that will be widely shared, it is our sad duty to chronicle the death of Mr. A. W. Hill. Prior to coming to Lindfield, the deceased gentleman lived at Haywards Heath, and for a considerable time acted as Chief Recruiting Officer. He was the second son of the late Colonel George Hill, R.H.G., and was 68 years of age. He was a man of fine presence, very affable, and highly esteemed by all residents—rich and poor. To mourn his loss he leaves a widow and seven sons, six of whom are in the service of their country. The funeral took place on Monday, the first part of the service being conducted at Lindfield Parish Church. The chief mourners were Mr. and Mrs. A. R. Hill, Mr. N. Hill, Company- Sergeant-Major C. Hill, A.S.C., Private S. Hill, A.V.C., Private B. Hill and Private M. Hill, R.A.M.C., and Lieut. A. E. Howe Lilley (Bedford). Mr. H. Taylor, F.R.C.V.S. (Haywards Heath) also attended the service. Among the contributors of beautiful floral tributes were the widow and sons, Mr. and Mrs. Sparkes and family, and Miss Low.—*Mid Sussex Times.*

At the annual meeting of the Glasgow and West of Scotland Discussion Society, held in Glasgow, on Wednesday afternoon, Sept. 27, the annual report was submitted, in which the following occurs :—

"In common with many other institutions, the society had to mourn the loss of useful members, and in particular the Executive Committee would name the veteran Principal McCall, F.R.C.V.S., who was from the first a genial and hearty supporter, presiding at several of its meetings, and delivering more than one useful practical lecture."

SUBSCRIPTIONS TO R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following subscriptions for 1916 to the College funds :—

James Mullany, Lieut. A.V.C.	£1	1	0
R. Craig Robinson, Carlisle	1	1	0
Previously acknowledged	777	16	6
	£779	18	6

During the month of August the Aberdeen sanitary inspectors destroyed 10,788 lb. of beef, 120 lb. of veal, 114 lb. of mutton, 20 lb. of offal, etc., alleged to be unfit for human consumption.

[Glasgow has experimented with a steam sterilizer.]

At Buckingham Market, last week, two shepherdesses, Miss Roddis and Miss Collins, who had brought three pens of sheep and lambs by road from Lillingstone Lovell—nearly six miles—were congratulated by the auctioneer, Alderman T. Osborne, J.P., who is the military representative on the Local Tribunal. He gave them the customary drovers' refreshment tickets.

A CORRECTION.

Dear Sir,—With reference to a report of the proceedings of a meeting of the Central Veterinary Society which took place on Thursday, 23rd February, and which appeared in *The Veterinary Record* of February 26th last, it has been pointed out to me that some of the statements made by me in reference to a Government horse which had been under my charge were made in error, and they are considered to reflect discredit on the Army Veterinary Corps and its organization.

This being so, I wish to unreservedly withdraw the remarks I made referring to the case at the time. The horse in question was actually destroyed; it did not die suddenly, as inferred in the report of the proceedings of the meeting.

I should be glad if you would insert this letter in the next publication of your journal.—Yours faithfully.

10 Oakhurst Grove, G. S. HEATLEY.
East Dulwich, S.E.

Treatment of Grease by maggots.

At St. Neots Petty Sessions, on Thursday, 21st Sept., before Mr. G. Fydell Rowley (in the chair), Mr. G. H. Sismey, Mr. B. Measrres, Mr. S. Hinsby, and Mr. G. E. Wrycroft,

John William Grey, farmer, Offord Darcy, was charged by Insp. Storey that being the owner of a mare he did unlawfully permit unnecessary suffering to be caused to the said mare by not providing proper treatment for same at Offord Darcy on 12th Sept.

He pleaded not guilty. He was in khaki, being in the A.S.C.

Mr. Sismey retired from the Bench.

P.c. Jas. Evernden, stationed at Offord, said, on the 8th Sept., at 3.30 p.m., he visited Mr. Grey's farm. He saw a bay mare with an enlarged leg at work. He did

not consider the mare was fit to work, and told Mr. Grey so. He replied that he should work it. Later, Mr. Grey said the mare he was after was another mare, not the one at work. On the 11th he and Insp. Storey visited Mr. Grey's farm, and saw a mare with a very large leg– not the one he had told Mr. Grey not to work. The off hind leg was very large, blood and matter were running from it, hundreds of maggots were in the leg, and every few seconds or so she would hold it up as if in pain, it was very tender, and the slightest touch made it take its leg away and stamp it on the ground, when dozens of maggots would fall out, and she would hold the leg up as if in pain. The stench from the leg was awful.

Insp. Storey corroborated the constable's evidence as to the mare they saw on the 11th, the leg was as big as his body. Mr. Grey, on the 8th, told him that the mare he had been told about was probably the mare in his top field, which he was treating with maggots. This was the mare he saw on the 11th. On the 12th he and Mr. Burston visited the mare, and Mr. Grey accompanied them. It was a cold, damp morning, and the maggots were not nearly so noticeable as on the previous evening. Mr. Burston poured some liquid on the leg and maggots came tumbling out by scores. Mr. Grey forbade him to pour any more liquid as he did not want the maggots destroyed. The mare he saw on the 11th he had slaughtered on the 16th.

C. Burston, M.R.C.V.S., St. Neots, deposed that the mare was in poor condition, hide-bound and generally unthrifty. The off hind leg was of enormous size, as far round as his body, if not more so. It was affected with grease, and discharging an offensive fluid, which dripped on the ground. There were large masses of "grapes" or proud flesh, bulging from the leg, and it was alive with maggots. The leg was very sensitive when touched, she nearly kicked him when he touched it. Taking the general condition of the mare, he came to the conclusion that she was suffering and tormented with these maggots. In his opinion it was gross cruelty to leave them there and make no attempt to get rid of them. She was lame when she moved. The leg was incurable. He had never heard of maggots as a remedy for grease, it was always considered best to get rid of them. He should say the leg had been very much neglected, just left to take its chance. He should think the maggots had been there since early summer. It was cruel to keep her alive, she was suffering all the time. The suffering was unnecessary, for the maggots might have been got rid of. She was on a fair pasture and ought to have got fat.

Defendant, on oath, said the charge was based on what he told the police officers on the 8th, that he was treating the mare with maggots as a cure. From May or June, 1915, a professional horseman had been attending the mare, until she was shot. On the 11th the mare was grazing quite naturally when they went into the field. There was no symptom of pain until Mr. Burston poured in the liquid. The mare had never suffered any pain whatever from maggots. He cured foot rot in sheep by maggots regularly. He had regularly attended the mare himself and never saw her suffer any pain, nor had anyone else. The maggots didn't touch the leg, they only touched the "grapes." He tried this treatment after she had been treated by a veterinary surgeon, and believed it would effect a cure if taken in time. Mr. Banks, of Hail Weston, had cured sheep by the maggot treatment.

J. P. Burr, M.R.C.V.S., St. Neots, deposed that he had attended this mare, and three months ago he told Mr. Grey he considered the leg incurable. On the 13th he was wired for and visited the mare, which was grazing naturally. Her tempeture was normal, her pulse practically normal, the off hind leg was suffering from elephantiasis, skin hard, thick, corrugated, she had "grapes," and there were some maggots. She showed no symptom that she was suffering agony. He didn't notice her draw her leg up. Mr. Grey never delayed, but called in veterinary advice promptly, his bill was £10 a year. Mr. Grey took the greatest care of every case, and was very observant: he had strong opinions. He had heard the maggot treatment was used extensively in the Argentine. His profession had not yet recognised the maggot treatment. He did not recognise it because he did not agree with it. With a leg like that there was sure to be a certain amount of suffering. She could stand on the leg, and three months ago was doing carting.

David G. Hawkins, Offord, said in May, 1915, he started to treat the leg. After a few months it did not get on, and Mr. Grey started the maggot treatment. Then witness went on with his treatment, but dried it too much, and Mr. Grey re-commenced the maggot treatment. Witness was ready to re-commence his treatment when the wound was more open. The maggots caused itching, but he never saw her suffer pain from the maggot treatment. The mare was not neglected. He believed he could have got her fit to work again.

Geo. Mann gave evidence as to the success of maggot treatment for foot-rot in sheep in 1914.

C. Afford had frequently seen the mare and never saw any symptoms of pain.

F. Wilson found her grazing same as other horses when he went to kill her. He had never seen a worse leg.

W. Baxter had seen worse, there were some maggots, but not "hundreds and hundreds."

Mrs. Grey, wife of defendant, who had worked the mare once and seen her frequently, had never seen any symptoms of pain. For weeks the mare had done nothing.

Insp. Storey declared some of Mrs. Grey's other evidence to be untrue, and produced the certificate of a veterinary surgeon authorising the mare to be slaughtered.

Mr. Grey then addressed the Court at considerable length with great vehemence, accused the Inspector of lying, and fiercely denounced him for calling Mrs. Grey a liar. He declared he could lay down his life in France with a clear conscience. It was a case of persecution.

When the Bench retired Mr. Grey refused to return to the dock, and Acting Sergt. Dale and Pc. Beecham, on the Instructions of the Inspector, endeavoured to take him there by force. A violent struggle ensued, the Inspector taking part in it. Part of the bar of the dock was smashed off in the struggle. Eventually defendant was got behind the partition, and, despite appeals by Archdeacon Hodgson and the Chief Constable, he refused to submit, and had to be held there by the constables until the Bench returned.

The Chairman pointed out that a law passed five years ago laid down that people could do wrong to animals by not doing anything. The question in this case was whether it was necessary for this mare to endure this pain for a good and proper purpose: that she might be cured. In that case there was nothing he was aware of that forbade it. Did the pain justify the end he must have contemplated: the failure of the treatment, and therefore justify him in permitting it to go on? The Court felt he was not a person actuated by bad motives, he was a person of judgment, and they did not wish to lay too much blame on him, but for the guidance of the public at large and the protection of animals in general, this sort of case must be treated in some way, therefore they would convict and impose a fine of 30/-.

Mr. Grey: I shall not pay. When I joined the Army I made all my things over, you can do what you like. I would just as soon lay in gaol for a fortnight.

Mr. Grey then left the Court.—*St. Neots Advertiser.*

At the Military Sports, held under the auspices of the 2/1 London R.G.A. at Thorpe-le-Soken, Essex, last Wednesday, Captain T. J. Batty, A.V.C. (T.F.), won the Two Miles Steeplechase from fourteen runners, the victory being a most popular one, both rider and horse being heartily cheered. Capt. Batty was the oldest rider in this race: he has two sons at the Front: both have been in France over twelve months.

Capt. Batty, A.V.C., and Mr. Roberts, F.R.C.V.S., Civilian Veterinary Officer, Ipswich, judged the Horse Classes, which were keenly contested.

At the conclusion of a big day's entertainment, Mrs. Arnold Bennett, wife of the celebrated novelist of that name, distributed the prizes.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.	Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
	Outbreaks (a)	Animals.	Outbreaks (a)	Animals.	Outbreaks (b)	Animals.	Outbreaks (b)	Animals.	(b)	Outbreaks (a)	Slaughtered. *
GT. BRITAIN. Week ended Sept. 30	7	9			2	4	11	37	2	57	37
Corresponding week in 1915 ...	4	5			2	3	12	26	1	45	125
Corresponding week in 1914 ...	11	11			1	1				115	692
Corresponding week in 1913 ...	9	11			1	1	17	22	2	36	357
Total for 40 weeks, 1916	408	581	1	24	42	102	1790	4002	197	3593	8805
Corresponding period in 1915 ...	446	508			40	71	‡644	‡1391	164	3208	14045
Corresponding period in 1914 ...	568	623	22	108	82	250	1530	2642	155	3272	31760
Corresponding period in 1913 ...	420	464			122	299	2016	4021	136	1904	25344

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.

(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked :—Derby 1, Kent 1, Stafford 2

Board of Agriculture and Fisheries, Oct. 3, 1916 Excluding outbreaks in army horses.

IRELAND. Week ended Sept. 30	...	...	...	...	...	...	Outbreaks 2	10	3	32
Corresponding Week in 1915 ...	...	...	...	...	...	...	1	5	4	20
Corresponding Week in 1914 ...	...	...	...	...	...	...	1	2	2	3
Corresponding Week in 1913 ...	...	...	...	...	...	...	3	3	1	1
Total for 40 weeks, 1916 ...	3	7	...	...	...	...	56	327	259	1612
Corresponding period in 1915 ...	1	1	...	...	1	3	59	319	197	1125
Corresponding period in 1914 ...	1	1	76	957	...	...	68	409	163	845
Corresponding period in 1913 ...	...	...	...	...	...	...	105	397	117	542

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Oct. 2, 1916

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection